REMARKS

The specification is revised to provide a brief description of the drawings, in response to the Examiner's objection. The revisions to the specification also replace the headings "Invention" and "Embodiments" with more appropriate headings and remove inappropriate references to particular claims.

Claims 1-20 remain in this application. Claim 4, previously indicated (together with Claims 5-17) as allowable, is rewritten to include all limitations of its parent claims. Accordingly, Claims 4-17 are believed allowable.

Claims 1-3 and 18-20 are rejected as anticipated by *Zornes* (5,456,076). The Applicant respectfully traverses this rejection.

First of all, the engine described in *Zornes* is a four-cycle hot gas engine instead of the dual-cycle engine disclosed by the Applicant and set forth in Claim 1.

Secondly, the rejection asserts that *Zornes* discloses a Stirling engine comprising a pair of outer cylinders having a pair of inner cylinders acting as outer pistons. Noting Figs. 8, 13, and 16 of *Zornes*, the rejection asserts that those "inner cylinders" define a pair of chambers for a pair of dual pistons sliding inside, acting as inner pistons as claimed. The Applicant respectfully traverses the Examiner's interpretation of *Zornes* and the application of that reference to the rejected claims.

The engine depicted in Figs. 6 and 13 of *Zornes* comprises neither a dual external piston nor a dual internal piston. This differences can best be seen in Figs. 8 and 13 of *Zornes*, wherein the engine comprises two single cylinders separated from each other, and each having inside a single internal piston. Please see the attached copy of Fig. 8 from *Zornes*.

Accordingly, *Zornes* lacks "a dual external piston...axially movable inside a basic cylinder member". Rather, that reference discloses single external pistons each axially movable within separate cylinders, as shown in each of the two separated cylinders in Figs. 8 and 13 of *Zornes*. That arrangement should be contrasted with the Applicant's engine, Fig. 3, clearly showing a dual external piston (200) axially movable within a basic cylinder member 100.

Claim 1 further recites "a dual internal piston...axially movable inside the dual external piston". Referring again to Figs. 8 and 13 of *Zornes*, that reference discloses a *single* internal piston axially movable inside the *single* external piston. Again, this disclosure by *Zornes* should be contrasted with the Applicant's dual internal piston 300.

Accordingly, the Applicant submits that *Zornes* does not anticipate a dual-cycle hot gas engine comprising the structural and functional elements required by Claim 1.

Claim 2 depends from Claim 1 and further characterizes the basic cylinder member of the Applicant's engine as including two outer end walls and a central partition in parallel with those end walls. This arrangement forms two like spaces in the interior of the basic cylinder member. It is apparent from Figs. 8 and 13 of *Zornes* that the disclosed basic cylinder member lacks any central partition forming two like spaces within that cylinder member. Accordingly, that reference fails to anticipate Claim 2.

Claim 3, which depends from Claim 2, further calls for the central partition of Applicant's basic cylinder member to have a central bore able to receive at least one sliding seal. This sliding seal is shown as element 1.1 in the Applicant's Fig. 1, received within the central bore formed in the central partition of the basic cylinder member 1. Again, *Zornes* lacks any such structure. Accordingly, that reference does not anticipate Claim 3.

Turning to Claims 18-20, those claims depend directly or indirectly from Claim 1 and are thus considered novel over *Zornes* for the reasons discussed above with respect to that parent claim.

The foregoing is submitted as a complete response to the Office Action identified above. This application should now be in condition for allowance, and the Applicant solicits a notice to that effect.

Respectfully submitted,

MERCHANT & GOULD

Date: July 20, 2004

Roger T. Frost
Reg. No. 22,176

Merchant & Gould, LLC
P.O. Box 2903
Minneapolis, MN 55402-0903
Telephone: 404.954.5100

23552
PATENT TRADEMARK OFFICE